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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,238	09/17/2003	Min-Yi Hsu	11285-US-PA	3285

31561 7590 03/22/2005

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER

SMITH, BRADLEY

ART UNIT	PAPER NUMBER
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2891

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/605,238	HSU ET AL.	
	Examiner	Art Unit	
	Bradley K. Smith	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8, 10, 12, 13 and 18 is/are rejected.
- 7) ☒ Claim(s) 5-7, 9, 11, 14-17 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input checked="" type="checkbox"/> Other: <u>search notes</u> . |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang et al. (US Patent 5,827,437). Yang et al. disclose the method comprising: performing a dry etching process for removing the antireflective layer (108), removing the conductive layer (106), and removing the barrier layer (104) (columns 1-3 and figures 1a and 1b). With regards to claim 2, Yang et al. disclose the anti-reflective layer being made of TiN and being etched with Cl₂ (see columns 1-3). With respect to claim 3, Yang et al. disclose the use of CHF₃ (see column 9 lines 25-35).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (US Patent 5,827,437) in view of Chen et al. (US Patent 6,753,249). Yang et al. disclose the method comprising: performing a dry etching process for removing the antireflective layer (108), removing the conductive layer (106), and removing the barrier layer (104) (columns 1-3 and figures 1a and 1b). However Yang et al. fail to disclose the wet etch in order to remove the conductive layer. Where as Chen et al. disclose the removal of the conductive layer by wet etching (column 5 lines 18-30). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Yang et al. and Chen et al. because wet etching will isotropically etch the conductive layer.

6. Claims 4, 8, 10, 12, 13, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (US Patent 5,827,437) in view of Chen et al. (US Patent 6,753,249). Yang et al. disclose the method comprising: performing a dry etching process for removing the antireflective layer (108), removing the conductive layer (106), and removing the barrier layer (104) (columns 1-3 and figures 1a and 1b). However Yang et al. fail to disclose the chemical mechanical polishing (CMP) step in order to remove the barrier layer (with respect to claim 8, and the wet etching step of the conductive layer). Where as Chen et al. disclose the removal of the barrier layer by CMP (and the wet etching step) (see column 5 lines 30-45). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Yang et al. and Chen et al. because with CMP one can

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precise detect the when the barrier layer has been removed and with a wet one can etch the conductive layer isotropically.

Allowable Subject Matter

7. Claims 5-7, 9, 11, 14-17, 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record neither teaches nor suggests the wet etching the conductive layer with sulfuric acid (claims 5, 6, 15, 16) etching the conductive layer with nitric acid (claims 7, and 17) the slurry containing aluminum oxide and hydrogen peroxide (claims 9, 11, 14, and 19).

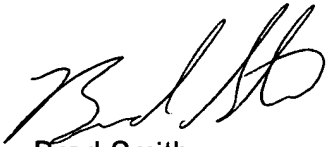
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley K. Smith whose telephone number is (571) 272-1884. The examiner can normally be reached on 10-6 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on (571) 272-1722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Brad Smith', is positioned above the printed name.

Brad Smith
Primary Examiner
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